

WHAT IS CLAIMED IS:

1. A liquid crystal display comprising:

two substrate glasses;

a liquid crystal layer between the two substrate glasses;

5 a polarizer placed on an outer side of one of the substrate glasses, the outer side being opposite to a liquid crystal layer; and

a quarter wavelength retardation plate between the substrate glass and a polarizer, the quarter wavelength retardation plate comprising:

10 a half wavelength retardation film, being adjacent to the polarizer, of predetermined wavelength wherein a slow axis makes a specific angle of Θ_1 with a transmissive axis of the polarizer; and

a quarter wavelength retardation film adjacent to the substrate glass wherein the slow axis make a specific angle of Θ_2 with the transmissive axis of the polarizer in accordance with relation equation of $\Theta_2 = 2 \times \Theta_1 \pm 45$ degree.

15 2. The liquid crystal display of Claim 1 wherein the predetermined wavelength is 5500Å.

20 3. The liquid crystal display of Claim 1 wherein efficient light path difference Δ of the liquid crystal layer is equal to a quarter of the predetermined wavelength and a reflector is placed on an inner side of the other substrate glass.

4. The liquid crystal display of Claim 1 wherein the specific angle Θ_1 is one selected from the group consisting of degree values (15, 75, 105, and 165) with limit to

an error of 5 degree and the specific angle $\Theta 2$ is decided by relation equation of $\Theta 2 = 2 \times \Theta 1 + 45$ degree.

5 5. The liquid crystal display of Claim 1 wherein the retardation films are single-axial films.

6. The liquid crystal display of Claim 1 further comprising:
an additional polarizer placed on an outer side of the other substrate glass, the outer side being opposite to the liquid crystal layer; and

10 an additional quarter wavelength retardation plate between the other substrate glass and the additional polarizer, the additional quarter wavelength retardation plate comprising:

15 an additional half wavelength retardation film, being adjacent to the additional polarizer, of a predetermined wavelength wherein the slow axis make a specific angle of $\Theta 4$ with the transmissive axis of the additional polarizer; and

an additional quarter wavelength retardation film adjacent to the other substrate glass wherein the slow axis make a specific angle of $\Theta 3$ with the transmissive axis of the additional polarizer in accordance with the relation equation of $\Theta 3 = 2 \times \Theta 4 \pm 45$ degree.

20 7. The liquid crystal display of Claim 6 wherein the effective light path difference $\Delta n d$ of the liquid crystal layer is equal to a half of the predetermined wavelength.

8. The liquid crystal display of Claim 6 wherein the transmissive axis of the polarizer is perpendicular to the transmissive axis of the additional polarizer.

9. The liquid crystal display of Claim 6 wherein combination to the values
5 (Θ_1 , Θ_2 , Θ_3 , Θ_4) is one selected from the group consisting of combinations (15, 75, 165, 105), (75, 15, 105, 165), (105, 165, 75, 15), and (165, 105, 15, 75).

10. The liquid crystal display of Claim 6 wherein a display region is divided into a reflective region and a transmissive region; and

wherein the reflective region, the effective light path difference $\Delta n d$ of the liquid crystal layer is equal to a quarter of the predetermined wavelength and a reflector is placed on the inner side of the other substrate glass; and

wherein the transmissive region, the effective light path difference $\Delta n d$ of the liquid crystal layer is equal to a half of the predetermined wavelength.

11. The liquid crystal display of Claim 10 wherein the display region is made of pixels having a thin film transistor and a region of the respective pixels is divided into a reflective region and a transmissive region.

12. The liquid crystal display of Claim 10 wherein thickness of the liquid crystal layer is controlled by regional thickness of an organic insulating layer.